

Machine Translation
of Description

* NOTICES *

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the image handling system of the electronic image pick-up equipment applied to the digital still camera which carries out record playback of the static image.

[0002]

[Description of the Prior Art] while incorporating the optical image of a photographic subject with this kind of equipment, for example, a digital still camera, conventionally as a static image which carries out photo electric conversion by each pixel of a charge-coupled device (CCD is called hereafter), and consists of a charge signal -- this image -- record media, such as a memory card, -- recording -- predetermined actuation of a user -- playback of a record image, and elimination -- the copy to external instruments, such as a personal computer, can be further performed now.

[0003]

[Problem(s) to be Solved by the Invention] By the way, although a user (photography person) has the case where he wants to protect as a work the image which he photoed, he does not have the function in which a photography person's intention can restrict each actuation of the above-mentioned playback, elimination, and a copy, in the conventional digital still camera. For this reason, in using one set of a digital still camera by two or more persons, it is eliminated intentionally in reincarnating others without notice and his record image being perused, or carelessly, or there is a possibility that it may be copied to an external instrument.

[0004] This invention solves the above-mentioned conventional problem, can restrict on actuation reincarnating others freely or copying the image which the user photoed by his intention, and aims at offering the image handling system of the electronic image pick-up equipment which can protect a record image as a work.

[0005]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the image handling system of the electronic image pick-up equipment concerning this invention An image pick-up means to carry out photo electric conversion of the optical image of a photographic subject, and to incorporate it as an image, and the storage means which carries out storage maintenance of the user who makes the image by this image pick-up means, and its image record, A display means to display this image at the time of playback of the image of this storage means, and the user discernment means for identifying whether it is by those by whom the user was registered, The setting means of the access privilege for permitting the actuation to what the user chose among each actuation of playback of the above-mentioned record image, elimination, or a copy, It has the control means which controls each actuation of the above-mentioned image pick-up means and the above-mentioned playback, elimination, or a copy. The above-mentioned control means In case each actuation of playback of the above-mentioned record image, elimination, or a copy is performed, it is characterized by performing the yes or no of use of the access privilege which starts a record image based on the discernment result of the user at that time.

[0006] In such an image handling system of electronic image pick-up equipment a user -- a photography person -- the time of each actuation of playback of a record image, elimination, or a copy being performed, if it registers that he is him and the desired access privilege is set up further --

communication link of a personal computer 19.

[0032] The flash plate control circuit 214 is a circuit which controls luminescence of the built-in flash plate 5. The flash plate control circuit 214 controls existence, the amount of luminescence, luminescence timing, etc. of luminescence of the built-in flash plate 5 based on the control signal of the whole control section 211, and controls the amount of luminescence of the built-in flash plate 5 based on the luminescence stop signal STP inputted from the modulated light circuit 304.

[0033] RTC219 is a clock circuit for managing photography time, and is driven with another power source which is not illustrated.

[0034] The control unit 250 is equipped with the switch equivalent to the Up key 6 mentioned above, the Down key 7, a shutter release 9, floor line mode setting key 11, the compressibility configuration switch 12, photography / playback / utility mode setting switch 14, the switch ESC "returning", and display changeover switch DISP.

[0035] The whole control section 211 consists of a microcomputer, controls organically the drive of each part material in the image pick-up section 3 mentioned above and the body section 2 of a camera, and carries out generalization control of the photography actuation of a digital camera 1.

[0036] In photography mode, if photography is directed by the shutter release 9, the whole control section 211 The thumbnail image of the image captured after photography directions in the image memory 209 and the compression image compressed with the JPEG method by the compressibility K set up by the compressibility configuration switch 12 are generated. Both images are memorized to a memory card 8 with the tag information (information, such as a coma number, exposure value, shutter speed, compressibility K, a photography day, data of turning on and off of the flash plate at the time of photography, scene information, and a judgment result of an image) about a photography image.

[0037] Drawing 5 shows the data array condition of said memory card 8. The image recorded by the digital still camera 1 consists of 40 coma with compressibility 1/20, and the image data (640x480 pixels) of the high resolution into which each coma 81-85 was compressed in the part and JPEG format of a tag, and the image data for a thumbnail display (80x60 pixels) are recorded. It is possible to treat as an image file of for example, an EXIF format in each coma unit. The photography person name (user name), the password, and the access privilege to various actuation of an image file are memorized by the tag.

[0038] Drawing 6 shows the discernment means 60 of the user of a digital still camera 1, and although the user chose drawing 6 among each actuation of playback of the record image in this camera 1, elimination, and a copy, it shows the setting means 70 of the access privilege for permitting actuation.

[0039] Each actuation of these users' discernment means 60 and the setting means 70 of an access privilege is memorized in ROM of said whole control section 211, and is controlled by CPU.

[0040] In drawing 6, 61 is the user input section and a user's identifier is inputted as one input for discernment on the screen of a display 10. An input of a user's identifier extracts a user as data in the user data extraction section 62. This user data is memorized by the user data storage section 63.

[0041] On the other hand, as another input for discernment, if a user's password is entered, the password of the above-mentioned password input section 64 will be collated to the above-mentioned user data by the collating section 65, and it is distinguished by the password input section 64 whether a password is "just" (is a user "he" or not?).

[0042] As the above-mentioned input for discernment, since a user and a password are used, registration by the user can carry out comparatively simply.

[0043] In drawing 7, if a user name is inputted into the user input section 61, the object item of an access privilege will be displayed by the object item selection section 72 of an access privilege on the screen of the LCD display 10, and will become selectable by it. If a user does selection actuation of the object item of an access privilege, the access privilege to the selected object item will be set up, and the access privilege storage section 73 will memorize.

[0044] CPU of the whole control section 211 is in charge of each actuation of playback of a record image, elimination, and a copy, and performs the yes or no of use of an access privilege based on the discernment result of the user at that time.

[0045] <a setup of a new user> -- this digital still camera 1 makes the same operability as the graphic

user interface (GUI) of a computer possess By setup of a "utility mode" etc., when there is an event to be chosen [of a user], the display of a message box is performed on the screen of a display 10. [0046] Moreover, it is used as actuation which means what the user "has affirmed for" said shutter release 9. Furthermore, the Up key 6 or the Down key 7 for coma delivery is used as actuation of sequential selection of alternative. The switch ESC "returning" is used for withdrawal of the shift to the upper layer from the current mode, and actuation, and actuation of cancellation.

[0047] First, a change setup of the digital still camera 1 is carried out with the mode setting switch 14 at a "utility mode." A setup of this "utility mode" displays a dialog (1. a setup of a user, setup of 2. access privilege) as shown in drawing 8 (a) on the screen of said display 10.

[0048] Here, if "1. a setup of a user" is chosen and pushing actuation of the shutter release 9 is carried out using the above-mentioned Up key 6 or the Down key 7, the screen of a display 10 will change to 1. "a setup of a user" like drawing 8 (b). With this operation gestalt, the user is limited to five persons. In this condition, the Up key 6 or the Down key 7 is operated again, and the user number corresponding to a user is chosen. After choosing a number, a user's identifier is inputted less than ten letter faces in Roman alphabet.

[0049] As the alphabetic character input approach, whenever it operates the Up key 6, a candidate Roman alphabet changes with a->b->c->-. If pushing actuation of the shutter release 9 is carried out when the alphabetic character of hope appears, the alphabetic character will be determined. If this alphabetic character is determined, the cursor on the screen of a display 10 will be shifted to the method of the right by the single character, and the input of the following alphabetic character of it will be attained.

[0050] Thus, an alphabetic character is inputted altogether, and if the switch ESC "returning" is operated, on the screen of a display 10, the dialog for a check (NO, YES) as shown in drawing 8 (c) will be displayed. Here, if "YES" is chosen and pushing actuation of the shutter release 9 is carried out, an identifier new as a user will be registered.

[0051] If a user name is registered, on the screen of the above-mentioned display 10, the display for a password setup shown in drawing 8 (d) will appear, and a password will be set up on this screen. Here, four digits are performed by the same approach as the input of the above-mentioned Roman alphabet, for example.

[0052] An input of four digits displays the dialog for a password check (NO, YES) like drawing 8 (e) on the screen of a display 10. Here, if "YES" is chosen, the password will be registered, and if "NO" is chosen, the screen of LCD (4) will turn into a screen of drawing 8 (d) again. After registration of a user name and a password finishes, the screen of a display 10 returns to the screen of (a) of drawing 8.

[0053] Below, the configuration procedure of the access privilege to the object item which a user desires is explained.

[0054] First, in the screen of a display 10 shown in drawing 8 (a), if "2. a setup of an access privilege" is chosen by the above-mentioned approach, the screen of a display 10 will turn into the display screen for an access privilege setup as shown in drawing 8 (f). Here, an access privilege is set up on the screen of a display 10 by the approach mentioned above. That is, the number of the user who sets up an access privilege is chosen, and if pushing actuation is carried out and the shutter carbon button 9 is determined, on the screen of a display 9, the object item of an access privilege as shown in drawing 8 (g) will be displayed.

[0055] If the above-mentioned Up key 6 or the Down key 7 is operated here, the object item of the above-mentioned access privilege will change cyclically with 1. perusal ->2. elimination ->3. copy ->. It will be set up, if pushing actuation is carried out and a shutter release 9 is determined according to a desired item.

[0056] In this condition, actuation of the above-mentioned Up key 6 or the Down key 7 changes another object item cyclically with he ->-> he [of all the members] ->. An object item (he or all the members) to choose is chosen, and it will be set up, if pushing actuation is carried out and a shutter release 9 is determined. Since it can come, simultaneously a selection directions mark (->) appears in front of another object item in the next step again, a selection setup of the object item of the next step is carried out similarly.

[0057] If the switch ESC "returning" is operated after setting up all the object items, on the screen of

a display 10, the dialog for an object item setting check (NO, YES) as shown in drawing 8 (h) will be displayed.

[0058] Here, if "YES" is chosen and determined, the various access privileges as a setting will be registered. If "NO" is chosen and determined, the screen of a display 10 will return to the display of drawing 8 (f).

[0059] With the above-mentioned procedure, setting registration of the access privilege of the above-mentioned object item can be carried out to all five users. Here, **** is meant as "him" and only he means all the members **** as "all the members", respectively.

[0060] The <setting approach of the user information at the time of photography>, next the user record procedure at the time of photography by the digital still camera 1 are explained.

[0061] First, in the "photography mode" of a digital still camera 1, if electric power switch PS is turned ON, on the screen of a display, a display as shown in drawing 9 (a) will appear.

[0062] Here, if the Up key 6 or the Down key 7 is operated, a predetermined item is chosen and pushing actuation of the shutter release 9 is carried out, on the screen of a display 10, a display like drawing 9 (b) appears and a user can be registered.

[0063] A setup of a photography person name, a password, and various access privileges is recorded into the tag of the image file in a memory card 8 as a photography person of the image photoed in the meantime until a power source is automatically turned off until the user who inputted at this time turns off the above-mentioned electric power switch PS or.

[0064] In the above "a user setup", if the switch ESC "returning" is operated, it goes into "photography mode" with user un-registering, and the photography person name in an image file and a password are recorded in the "sky", all of a setup of various access privileges are recorded by "all the members are possible", and it can perform each actuation without constraint of all the members.

[0065] If the <each [of playback, elimination, and a copy] actuation> digital still camera 1 is changed to a "playback mode" with the mode setting switch 14, the image recorded on the memory card 8 will be reproduced, and it will be displayed on the screen of the above-mentioned display 10.

[0066] When the above "a playback mode" is changed from "photography mode" by the power-source ON state, the user name of a setup at the time of "photography mode" is held. When it is made a "playback mode" from a power-source OFF state and an electric power switch 15 is turned on, the check of a current user name is performed by the same procedure as the time of photography.

[0067] If the item of a user like drawing 10 (a) is displayed on the screen of a display 10 and a predetermined user name is chosen at this time, as shown in drawing 10 (b), the dialog (NO, YES) of a check of a user name will be displayed.

[0068] If "YES" which is a user is chosen and determined from the display on the screen of the display shown in drawing 10 (b), on the screen of a display 10, as shown in drawing 10 (c), the display for checking whether it is "him" will appear, and it will become a password check activity. Thereby, a user is checked and it can carry out without an alert display of each actuation concerning "him" whom the user set up at the time of record.

[0069] When a password is not "just", an access refusal alert as shown on the screen of a display 10 at drawing 10 (d) is displayed.

[0070] In the alert display condition shown in drawing 10 (d), if the Up key 6 or the Down key 7 is operated, "YES" is chosen and pushing actuation of a shutter release 9 determines, on the screen of the above-mentioned display 10, the dialog of the password input again shown in drawing 10 (c) will be displayed. At this time, a password is newly entered by the approach mentioned above, and if judged with this being "just", a playback image will be displayed on the screen of a display 10. Conversely, if judged with a password being "unjust", an access refusal alert as again shown in drawing 10 (d) will be displayed on the screen of a display 10. Therefore, if the desired access privilege is set up while registering a user name, a possibility that others may reincarnate and peruse without notice the image which the user photoed, or it may be eliminated, or may be copied in an external personal computer etc. will disappear.

[0071] In the power-source ON state of a digital still camera 1, when a user name does not exist, or when not inputting a user name, it can be used by operating the switch ESC "returning" with user un-registering.

[0072] It can be made to shift to a coma after the coma reproduced now, or a front coma by operating the Up key 6 or the Down key 7 at this time. CPU in said whole control section 211 reads the access privilege of the image file of the coma specified first, if a perusal setup is "all the members", will perform predetermined elongation processing in a JPEG image, and will display an image ((a) of drawing 11) on a display 10.

[0073] On the other hand, an access refusal alert as men other than the user show on the screen of a display 10 at drawing 11 (b) to the image ((d) of drawing 11) which records and is applied to the user "him" who took a photograph is displayed.

[0074] In the alert display condition shown in drawing 11 (b), if the Up key 6 or the Down key 7 is operated, "YES" is chosen and pushing actuation of a shutter release 9 determines, on the screen of the above-mentioned display 10, the dialog of the password input shown in drawing 11 (c) will be displayed. At this time, a password is entered by the approach mentioned above, and if judged with this being "just", there is no alert display to the image which can be perused with that password, and it can reproduce and peruse a playback image (drawing 11 (d)) on the screen of a display 10. That is, the user name (one or more persons) which was not set up at the time of power-source ON will change into the condition of having set up from the middle.

[0075] By carrying out a password setup with a user at the time of power-source ON, and newly performing a password input after that at the time of playback actuation of the image applied to "him" of a photography person except the image of the user who inputted first, there is no alert display of both images which can peruse for a binary name, and it becomes possible to reproduce and peruse.

[0076] With the above operation gestalt, although the actuation at the time of playback actuation of an image was explained, also in elimination and a copy (transfer to other devices), it becomes the same actuation.

[0077] Moreover, although the gestalt of the above-mentioned implementation explained the example which recorded the access privilege of a file as one of the tag information in a file, the access privilege setting table file which recorded the access privilege in addition to this is prepared specially, and a system which performs all actuation with reference to this file is also considered. However, since the scene and image file which are copied in a file unit from a record medium, and an access privilege setting table file exist according to an individual, if the copy of only an image file is performed, in a copy place, the case where the above-mentioned access privilege is lost can be considered. For this reason, if it sets up so that an image file and the above-mentioned access privilege setting table may be copied together, the access privilege to the image of the user who also registered the copy place will be maintained.

[0078] Drawing 12 and drawing 13 show the digital still camera 1 and the user discernment means 60 which are other operation gestalten of this invention, respectively.

[0079] In drawing 12 , it is located in the part where the fingertip of the user who grasped this tends to hit, for example, the top face of a shutter release 9, (actuation side), and the front face of the tooth-back grip section 20 like this example, and the fingerprint sensor 21 is formed in the body section 2 of a camera as the fingerprint input section.

[0080] In drawing 13 , if a user's fingerprint is detected in the fingerprint input section 81 and inputted as one of the input for discernment, in the fingerprint data extraction section 82, a user's fingerprint data will be extracted and storage maintenance of this data will be carried out at the fingerprint data storage section 83. On the other hand, a user's password is entered by the password input section 64.

[0081] In the collating section 65, fingerprint data and above-mentioned password of the user concerned which are the contents of storage of the above-mentioned fingerprint data storage section 83 are collated, and it distinguishes whether a user is "him." Since the whole control section 211 performs the yes or no of use of an access privilege based on this result, the same operation effectiveness as said operation gestalt is demonstrated.

[0082] In this case, only by a user grasping a digital still camera 1, since one of the input for discernment is inputted, it can carry out quickly [registration of a user] and easily, and user-friendliness improves much more.

[0083] in addition, not only the above-mentioned fingerprint sensor 21 but a user -- it is also possible

to use what can distinguish him, for example, the retina detection sensor to a user's eye etc.

[0084]

[Effect of the Invention] As mentioned above, while this invention makes the user who records a photography image memorize as a registrant The access privilege for permitting actuation of a desired thing among each actuation, such as playback of a record image and elimination, is made to set up. Since it makes it identify whether you are the registered user and was made to carry out the yes or no of the use of the set-up access privilege based on the discernment result when performing playback of a record image etc. the actuation which others are reincarnated, eliminates the record image of the registered user, or copies it to an external instrument when using one equipment by two or more persons -- a user -- by his intention It can be made impossible and, thereby, a user is effective in the ability to protect its own record image.

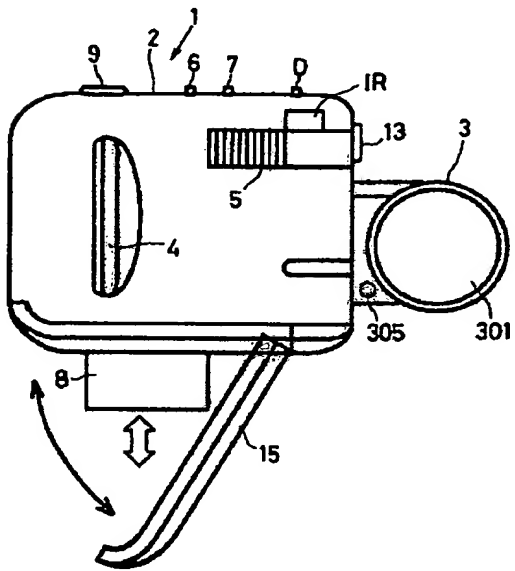
[0085] Moreover, in invention of claim 2, since the user name and the password were made into the input for discernment for discernment of a user, the activity for registration of a user can carry out comparatively easily.

[0086] Furthermore, in invention of claim 3, since a user's fingerprint was made into the input for discernment instead of the user for discernment of a user, the activity for registration of a user becomes very simple.

[0087] By invention of claim 4, when a photograph is taken with user un-registering, the user name and password at that time are made to memorize in the "sky", and since it constituted to all the members so that it might be an authorized state and an image might be recorded, as for a setup of various access privileges, all users can perform playback of a record image, elimination, and a copy altogether further again, without being restrained in any way.

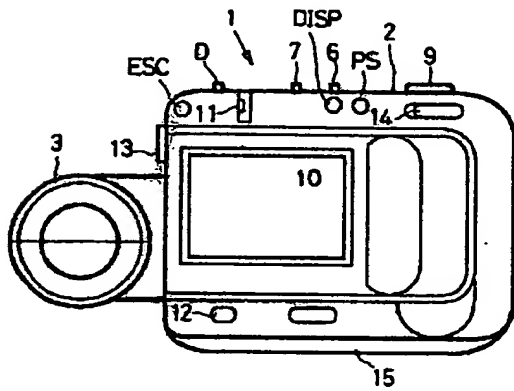
[Translation done.]

Drawing selection 



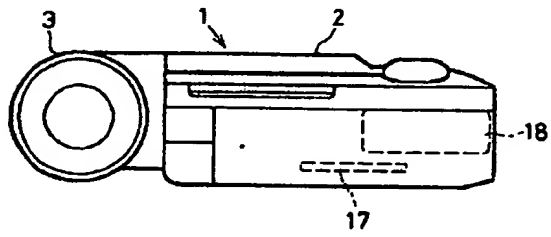
[Translation done.]

Drawing selection drawing 2

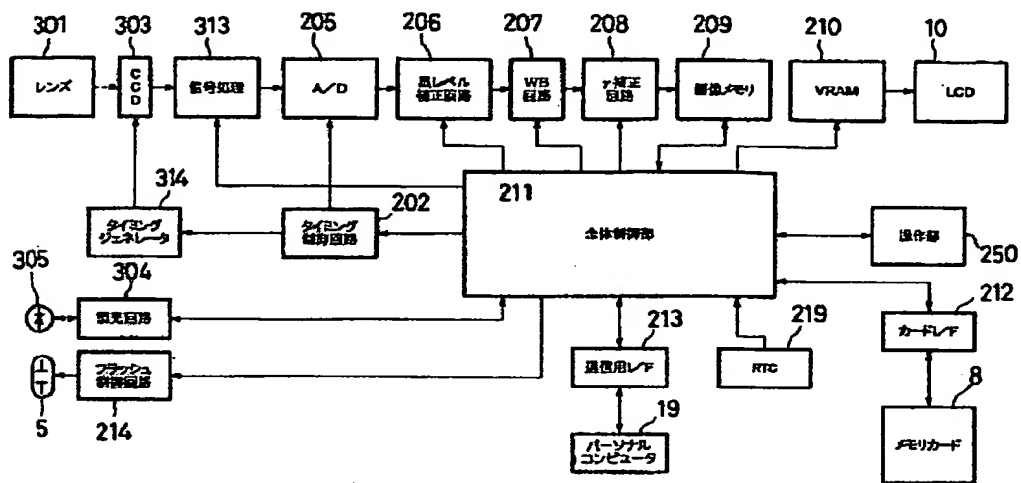


[Translation done.]

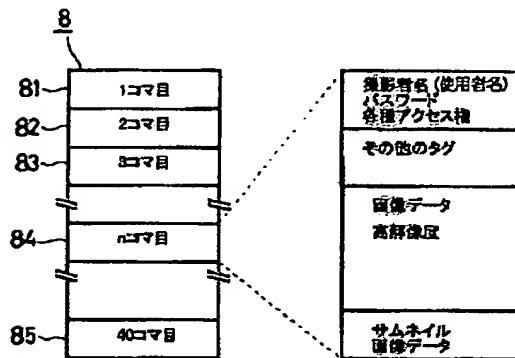
Drawing selection drawing 3



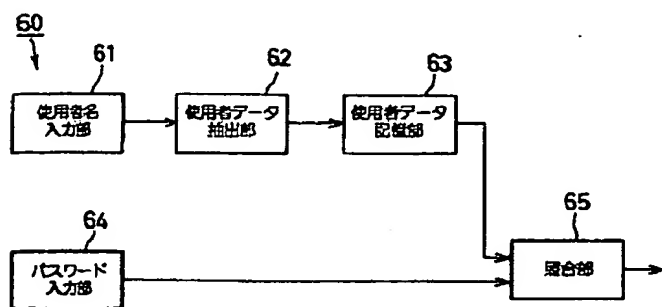

[Translation done.]

Drawing selection drawing 4

[Translation done.]

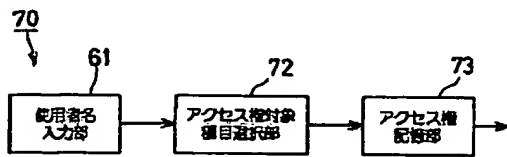
Drawing selection drawing 5 

[Translation done.]

Drawing selection drawing 6 

60 : 利用者登録手順

[Translation done.]

Drawing selection 

70 : アクセス権の設定手段

[Translation done.]

Drawing selection **drawing 8**

(a)

ユーティリティ

→1. 使用者の設定
2. アクセス権の設定

(b)

使用者の設定

1. Taro
2. Hanako
→3.
4.
5.

(c)

使用者の設定

3. Ichiro
を登録します

No Yes

(d)

パスワードの設定

パスワードの登録
(数字4けた)

487_

(e)

パスワードの設定

Ichiroのパスワード
を4878で登録します

No Yes

(f)

アクセス権の設定

1. Taro
2. Hanako
→3. Ichiro
4.
5.

(g)

Ichiroのアクセス権

1. 閲覧 本人 全員
2. 削除 本人 全員
→3. 検索 本人 全員

(h)

Ichiroのアクセス権

閲覧 本人 全員
削除 本人 全員
検索 本人 全員
に設定します

No Yes

[Translation done.]

Drawing selection

(a)

練習 使用者の設定

1. Taro
2. Hanako
- 3. Ichiro
- 4.
- 5.

(b)

■ ■ 使用者の設定 ■ ■

使用者: Ichiro

No Yes

[Translation done.]

Drawing selection

(a)

■ ■ 使用者の設定 ■ ■

1. Taro
2. Hanako
→ 3. Ichiro
4.
5.

(b)

■ ■ 使用者の設定 ■ ■

使用者 : Ichiro

☐ No ☐ Yes

(c)

パスワードを入力してください

(d)

アクセス権がありません。
パスワード入力しますか？

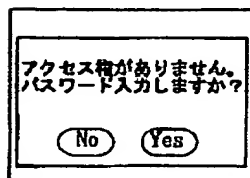
☐ No ☐ Yes

[Translation done.]

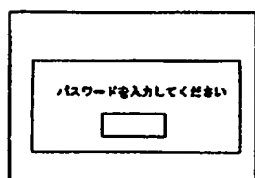
Drawing selection drawing 11



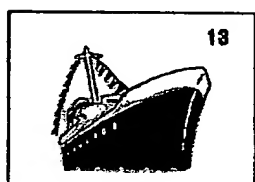
(a)



(b)



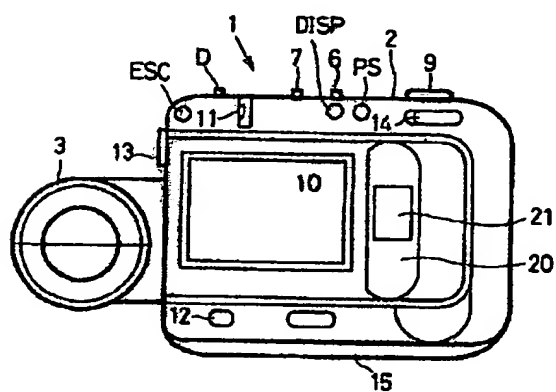
(c)



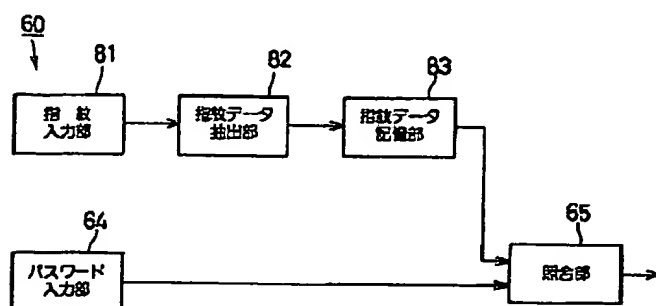
(d)

[Translation done.]

Drawing selection



[Translation done.]

Drawing selection 

[Translation done.]